zx mushroom club

PB 35644
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☎ (012) 46-5228
TELEX 3-21856 S.A.

January/Febuary 1989

Yes, believe it or not, the newsletter is still going. As from this month the newsletter will appear around the middle of the two months in question, round about the time that you are receiving this newsletter.

I hope that you all had a very pleasent christmas and new year and that 1989 going to be a great year. Unfortunately we have begun this year on not such a happy note - the exchange rate has worsned and as a result the software and hardware that INFORMATION ENTERPRISES has on offer are not quite as cheap as they used to be. However, their prices are still good in comparison with some other suppliers - so don't stop supporting them!

There has been some confusion - I believe - about the locations of Information Enterprises, and as to where what goes. I hope that the following will sort the problem out:

AMAbop Industries

Street Address: Zone 15
J3, Third Street
Ga-Rankuwa
Bophuthatswana

Postal Address: Private Bag 1104
Ga-Rankuwa
Bophuthatswana
0208

INFORMATION ENTERPRISES

Street Address: 417 Milner Street
Waterkloof
Pretoria
0181

Postal Address: P.O Box 35644
Menlo Park
Pretoria
0102

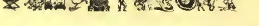
That sorted out, I would like to just quickly mention some of the items advertised in the newsletter. For anyone who is considering upgrading their system, now is the time to do so. The prices advertised are for items that are in stock, unless otherwise indicated. When these are sold out, the prices of said items are expected to increase considerably. I would strongly advise you to take advantage of these prices NOW while the going is still good.

INFORMATION ENTERPRISES is buying second hand spectrums and peripherals, if you are considering selling, and would like to post your system to them for an evaluation, then **PLEASE USE THE STREET ADDRESS FOR INFORMATION ENTERPRISES.** This request also applies to any other parcels which may be sent to them for repairs etc. Remember to pack your system securely to prevent breakage in the post. You know what the Post Office can be like if they are feeling nasty!

Some really great software has been ordered and should be arriving late January, early Febuary. Please be patient, IE is trying to get the software as quickly as possible.

That is all from me for the time being, oh before I forget - we have a great competition for you this month. We would like to see lots on entries. Can you crack the code? There is also a great prise for the winner - who is it going to be?

A last word - please encourage your friends to join the club again - that way we can put more articles in the newsletter. *ANNE*



HOE OM 'n "GRAPHIC" OOR DIE SKERM TE LAAT LOOP

Deur Roelof Engelbrecht

Dit klink moeilik, maar as jy 'n bietjie gaan sit en dink, dan is dit tog nie so moeilik nie!

Eerstens moet ons die data vir die graphic ontwerp en dit in 'n veilige plek stoor. Ons sal 60 000 as 'n gerieflike plek gebruik.

N.B. Indien hy 'n lang BASIC program gebruik, dan moet jy 'n CLEAR 59 999 gebruik om te sorg dat dit nie uitgewis word nie. (dis nou jou data vir die graphic!)

Die volgende program sal die nodige doen.-

```
10 FOR n=60000 TO 60007
20 READ d
30 POKE n,d
40 NEXT n
100 DATA 24, 126, 255, 255, 219, 255, 255, 85
```

Die program hierbo sal 'n PAC-MAN karakter in die geheue stoor. So as jy GRA-A print dan behoort dit op die skerm te verskyn, maar waar's dit?!!

Die gehuim lê in 2 geheue - blokkies - 23675 en 23676.
Hulle moet met 2 waardes gestoor word.

```
POKE 23675, n-256*INT(n/256)
POKE 23676, INT(n/256)
```

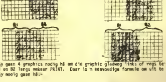
Waar "n" die waarde is waar jou graphics gestoor is. In hierdie geval is dit 60000. Probeer om nou weer jou graphic te print.

Uiteindelik het ons 'n graphic om mee te werk!

Die eerste probleem is dat 'n mens nie BASIC suksesvol kan gebruik nie. Dis geheel en al te stadig! Jy moet 'n vinniger taal aanleer soos Masjien-kode. Die artikels oor Masjien-kode deur D. Roux vind ek baie nuttig en ek glo julle sal nog baie baat daarby vind as hy met die reeks volhou. Mark Berkowits se artikels is ook goed, maar ek vind dat dit meer op die proffessionele programmeerder gemik is.

Nou, om terug te kom by die graphics. Ons graphic bestaan uit 'n blok van 8x8 blokkies. Ek het besluit dat ons die graphic 2 blokkies op 'n slag sal beweeg, want dit vereis minder dink-werk! Om in BASIC jou graphic links of regs te beweeg is baie maklik, maar jy sal opmerk dat dit nie baie glad beweeg nie en ook onvoldoenbaar.

'n Maklike metode is om jou graphic in 2 blokke te stoor en dat dit op die skerm te PRINT·



m.a.w. - jy gaan 4 graphics nodig hê om die graphic gladweg links of regs te laat beweeg. Jy moet B1 en B2 langs mekaar PRINT. Daar is 'n eenvoudige formule om uit te werk hoeveel graphics jy nodig gaan hê.-

$\frac{64}{x.y}$ (64/(X x Y))

X = die hoeveelheid blokkies wat jou graphic op die X-as gaan beweeg
Y = die hoeveelheid blokkies wat jou graphic op die Y-as gaan beweeg

Next, to PRINT the character on the screen, load the A register with the character's ASCII value and use the ROM routine at 16. Instead of CALL 16, you can also instruct the CPU to RST 16. It functions in the same way.

To PRINT an "A" at the extreme top row, extreme right column, one would therefore use the ROM routines in the following way:

```
LD B,14              ;top row: equivalent of AT 0,x in Basic
LD C,2               ;right column: equivalent of AT x,31 in Basic
CALL 3545            ;calculate screen buffer address
LD A,65              ;ASCII value of "A" into A register
RST 16               ;PRINT "A" - equivalent of CALL 16
RET
```

This assembly program will function in the same way as PRINT AT 0,31;"A" in Basic.

Using the ROM routines are difficult, in this case, and require strange calculations for the row/column co-ordinates. It also cannot cope with graphics: when we write an arcade game, we definitely don't want to use a B to defend us against a deadly squadron of A's! Consider this piece of assembly program:

```
LD B,10
LD C,10
LD DE,CROSS
CALL PRINT
RET
```

We have to read the row/column co-ordinates of a shape into B and C respectively, load a label called CROSS into DE and call a routine PRINT to actually print a cross on the screen at 10,10. This is much easier to use than the ROM routines - I will show you how to construct subroutines which will support this format.

To start off, I am going to use a look-up table to calculate the screen address of the row stored in B. The column value stored in C is then simply added to the address and the top of the character square is thus calculated. The top of the first character row starts at address 16384, the top of the second at 16416, etc. In fact, we can draw up a table in our assembly program and call it LOOK, for <u>look</u>-up, and list these values from the first to the 24th:

```
LOOK    DEFW 16384
        DEFW 16416
        DEFW 16448
        DEFW 16480
        DEFW 16512
        DEFW 16544
        DEFW 16576
        DEFW 16608
        DEFW 18432
        DEFW 18464
        DEFW 18496
        DEFW 18528
        DEFW 18560
        DEFW 18592
        DEFW 18624
        DEFW 18656
        DEFW 20480
        DEFW 20512
        DEFW 20544
        DEFW 20576
        DEFW 20608
        DEFW 20640
        DEFW 20672
        DEFW 20704
```

printers

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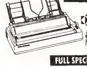

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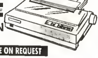

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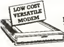

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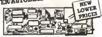

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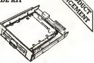

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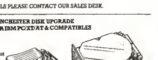

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If you want to sell your system, please post us your computer & peripherals or bring them in to our offices in Pretoria.

Phone to enquire about prices offered on goods.

HAPPY NEW YEAR

MONITORS

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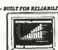

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ROM 32 Kbytes

CPU
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24 x 32 Colour resolution
8 colours foreground,
8 colours background,
plus intensity and flash settings
Independently controllable border

Sound:
Three voices tone and/or noise with 16 envelope setting
One voice CPU generated
Output via TV or Audio socket

Keyboard:
58 keys full travel "Qwerty" keyboard.

Storage:
Integral Datacorder
Volatile Silicon Disc

Technical Specifications

Firmware:
48K Spectrum BASIC (compatibility mode)
128K enhanced Spectrum BASIC with full screen editor and menu driven command system
Calculator
Single-key program loading system

Interfaces:
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Technical Specifications

Firmware
48K Spectrum BASIC
(compatibility mode)
128K Spectrum ZX +3 BASIC,
integrated with +3 DOS
Storage selection by reassignable default with optional override

Interfaces.
UHF PAL TV port
Serial interface (RS232) port
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Memory:
RAM 128 Kbytes as 8 x 16K pages
ROM 64 Kbytes as 4 x 16K pages

CPU
Z80A running at 3.54690 MHz

Screen
256 x 192 Pixel resolution
24 x 32 Colour resolution
8 colours foreground,
8 colours background,
plus intensity and flash settings
Start of buffer switchable
Independently controllable border

Sound:
Three voices tone and / or noise
with 16 envelope settings
One voice CPU generated
Output via TV Audio or Monitor socket

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NEW

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INFORMATION ENTERPRISES will be closed over the EASTER WEEKEND - After all, we also need a break every now and again!

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HELP!! do you have any information on these two games - KENTILLA and MESSAGE FROM ANDROMEDA. Nicolas Vorster from Queenstown is having problems with them!

CAN YOU HELP? Mr Nel from Potch has the following system: Spectrum128K, Tasprint, The Style Writer, Phillips Monitor, Breakthroug Interface made by Arrow Research 1986, Seikosha SP1200. Have you been able to customise this program(s) for this system - for the Breakthrough Interface? Please Help.

GREMLIN INVASION! PLEASE HELP!! Michael Bishop from Kloof has the following problem-He scares the Gremlins into the vents with the camera and weld them all closed with the plates But, they still keep comming! After Gizmo opened the locked door He sealed the last vent but he cannot block the broken window.
How is this done and where do they come from? What use are thepipes and jointing tape, and how does he kill them? Any suggestions??

TASMAN TROUBLES!! Mr Janse v Rensburg from Kimberley has the following hitch - he uses Tasword PC 1.05 word processing package. Do you know how to get rid of the space created by control K when printing mathematical and scientific symbols?

A very happy mushroomer sent us this letter. I think that we should share it with our other members in the Club.

I've been with the club for about 8 months now, and I must say, I'm impressed. For those of you who say that the club's prices are to high, or that it's a stupid idea for the club to ask members fees again,don't know what they are talking about! When I received the news that we must pay member fees again I didn't like the idea myself so I've done some enquiries about other cubs. There are a few, and I was supprised about their fees. One of the clubs asked R30.00 and the other two no less then R20.00. I say the Mushroom Club's fees are VERY reasonable and prices very low. So how is that for all you complaining members!!?

This very encouraging note was received from Ettienne Smith of Evander. Thank you Ettienne.

INTERESTED IN ACHIEVING YOUR OBJECTIVE MORE QUICKLY?

Here are some POKES for those of you who would like to get there more quickly:-

For all you Multifacial People!!

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PT1 infinite lives POKE 64011,167
PT2 infinite lives POKE 61607,167
Type in any access code!

RENEGADE

Infinite lives POKE 41048,195
no of lives x POKE 23343,x

WIZBALL

```
Infinite lives POKE 37062,0
Invincibility POKE 36831,0
              POKE 36832,0
              POKE 34833,0
```

Normal POKES

GUNFRIGHT

Stops bandit drawing in quickdraw mode

```
10 FOR a=1 TO
7. LOAD "" CODE:NEXT
a. POKE 47919,0. POKE
47920,0. RANDOMIZE USR
23424
```

TARGET RENEGADE

When entering your name use the J,K & L keys as you would in Decathlon, except using all 3 keys. The writing should go over your score, and when it does, push ENTER. You'll return to the game immediately, with infinite lives!

Now that the computer has these addresses stored and the assembler knows where they start, it is possible to write a routine which calculates where the top of a character square is using B and C as row/column pointers. I called this routine CALC for <u>calc</u>ulate.

```
CALC   LD H,0
       LD L,B            ;load HL with B (row)
       ADD HL,HL         ;multiply by 2
       PUSH DE           ;store value in DE
       LD DE,LOOK        ;DE=start of look-up table
       ADD HL,DE         ;Add row to start of look-up table
       LD E,(HL)
       INC HL
       LD D,(HL)         ;screen address stored at that address into DE
       EX DE,HL          ;put the result in DE in HL
       LD D,0
       LD E,C            ;DE loaded with C (column)
       ADD HL,DE         ;add row to column
       POP DE            ;retain initial value of DE
       LD B,8            ;is going to be used later
       RET
```

After CALC has calculated the top of the character square, a routine is needed to do the printing of the shape (e.g. the cross in the example). I decided to call the routine SHAPE.

```
SHAPE  LD A,(DE)         ;A contains byte at DE
       LD (HL),A         ;load screen address with that byte
       INC DE            ;next byte of shape
       INC H             ;add 256 to screen address
       DJNZ SHAPE        ;repeat until B is 0
       RET
```

It may be worth the effort to include a routine which prints a blank so that the shape can be wiped. I called this routine WIPE.

```
WIPE   LD (HL),0         ;load screen address with 0
       INC H             ;add 256 to screen address
       DJNZ WIPE         ;repeat until B is 0
       RET
```

Finally, the PRINT routine which calls all these routines in sequence.

```
PRINT  PUSH BC           ;to prevent it from being corrupted
       CALL CALC
       CALL SHAPE
       POP BC

       RET
```

And a routine to print a blank:

```
BLANK PUSH BC
      CALL CALC
      CALL WIPE
      POP BC
      RET
```

Even if you understood nothing of these routines, you can still use them by loading B and C with row/column and calling PRINT or BLANK. If PRINT is called, DE will need the label value of the graphic data.

In the example case, you will need to define the data for the cross and label it CROSS somewhere in the assembly program.

```
CROSS  DEFB 24,24,24,255,255,24,24,24
```

If you want to print your shape by the pixel, and not by the character, you will need to define a look-up table of your own with the screen address values from 0- 75 for <u>row</u>. It will be necessary to call the routine which calculates the screen address before each byte which is poked into the screen memory.

TEST YOUR KNOWLEDGE - WHAT IS:-

1. Special circuits which convert the signals from a computer into a form other electronic equipment can deal with, and vice versa. (9)
2. Character of CODE 85 (Print CHR$ 85). (1)
3. A system of computers, sometimes with other computer peripherals, linked together to share information. (7)
4. A high-level programming language used-mainly by scientists and mathematicians. (7)
5. Character of CODE 78. (1)
6. Any information the computer gives you. (6)
7. This function gives the natural logarithm of a value. (2)
8. At the end of a subroutine,tells the computer to go back to the instruction after the one where it left. (6)
9. Character of CODE 90. (1)
10.A code consisting of abbreviated instructions used as an aid to low-level programming (9)
11.This function checks the status of the keyboard and other input and output devices.It reads a byte from a given port address that indicates the status of the device connected to the port. (2)
12.Moving pictures on the screen. (10)
13.Character of CODE 65. (1)
14.An electronic component which stops or sends the pulses in the circuits of a computer,depending on the pulses it receives. (10)
15.This command may be used in an INPUT statement. - - 0,0 displays at the start of the line above the bottom line and the display scrolls up if more than two lines are displayed. (2)
16.A special part of the computer's permanent memory (ROM) where instructions is a programming language are converted into machine code. (11)
17.Is the second part of a statement/commahd which makes the computer loop back through the program and repeat any instructions inside the loop a fixed number of times. (4)
18.Allows you to alter a line in a program without typing in the whole line again. (4)
19.Character at code 70. (1)
20.Wipes the program from the computer's memory to clear it for the next program. (3)
21.The first part compares pieces of data (e.g.numbers or words or the contents of variables) and does different things depending on the results. (2)
22.The second part mentioned in 21 above. (4)
23.Character of CODE 75. (1)
24 When this message is flashed up on the screen by the computer it is telling you that there is a bug in the program. (5)
25.The computer ignores lines starting with this statement (3)
26.First word of the Mushroom Club. (2)
27 Short for picture elements (6)
28 The memory inside the computer where the program ahd data are stored (3)
29.Is a way of getting the computer to ask you for data while program is running. (5)
30.A series of characters for storing in a variable (8)
31.One of the two digits (0 and 1) that make up the binary code. (3)
32 Another word for ESCAPE from a routine (not available on the ZX). (4)
33.An alternaties to a Monitor. (2)
34.In a computer, this is a pulse single or a no-pules single. (3)
35 This command specifies the foregrouhd colour in which characters are displayed. (3)
36.This function calls a user-defined function. (2)
37 Puts a variable label on a memory space and puts some information in it. (3)
38 Character of CODE 84. (1)
39.Acts as a logical operator to test the truth of a combination of conditions. (2)

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